

ABSTRACT OF THE DISCLOSURE

The present invention includes noble metal bipolar separators and seals for solid oxide fuel cells. Controlled porosity vents steam formed within the separator by the reaction of hydrogen diffusing from one side with oxygen diffusing from the other. This venting prevents the buildup of destructive pressure within the separator while retaining the required gas separation and electronic conductivity properties. The principle of the invention applies to applications other than solid oxide fuel cells, and includes materials other than noble metals.